# MODIS TECHNICAL TEAM MEETING

**October 22, 1998**

Robert Murphy chaired the MODIS Technical Team Meeting. Present were Steve Kempler, Bruce Guenther, Eric Vermote, Harry Montgomery, Michael King, Ken Anderson, Bill Barnes, Dorothy Hall, Al Fleig, Barbara Conboy, Dan Tarpley (NOAA) and Dave Toll.

## 1.0 SCHEDULE OF EVENTS

Next MODIS Science Team Meeting December 15 and 16, GSFC area

## 2.0 MINUTES OF THE MEETING

### 2.1 Instrumentation

Guenther said the MODIS FM1 thermal vacuum calibration is currently in the second cycle plateau. Anderson said there are two main concerns: a power supplies shutdown problem and a drift in the PC bands. The power supply shutdown problem occurs at high currents, such as during SRCA spatial calibrations. Loss of science data would occur if these shutdowns occur on-orbit. The PC drift problem appears to be correlated to the redundant side TCP (Telemetry and Command Processor) board. Analysis of data thus far indicates very repeatable data. Anderson said the PC drift (or Near Side) problem is showing up as a drift upwards on one mirror side and downwards on the other mirror side. They are seeing a correlation with a sector resynchronization that may help them trace down the problem. He said once they identify the power supply and PC drift problems there is uncertainty how much of the instrument will have to be disassembled for repair and what impact that work will have on other components. Anderson said they are running STRs to understand the Apparent Discrepancy. There is also a potential problem in the LWIR focal plane thermistor reading. Anderson said they will continue with instrument testing. Testing will use only the primary side TCP board. Science data should be unaffected by use of only the primary side TCP. Anderson said there is a review this afternoon of the transition to the nominal plateau data set with the transition planned for later tonight.

Guenther reported replacing 1000-ohm resistors with 50-ohm resistors completed the resistor fix problem.

Murphy reported on a meeting earlier on Thursday that addressed the need for recalibration of the MODIS sensor after the resistor fix is installed at Lockheed Martin in Valley Forge. Making the presentation on behalf of MODIS was Vince Salomonson, and the attendees included Chris Scolese (AM Project Office). Ken Anderson, Kevin Grady (AM Project Manager), George Morrow (PM Project Manager). Robert Murphy, Yoram Kaufman, Michael King and Bill Barnes.

Salomonson asserted on the basis of science considerations, that the MODIS PFM instrument from the AM-1 spacecraft should be shipped back to SBRS for recalibration. The recalibration work is needed because the resistors are going to be replaced. This replacement is absolutely the right thing to do, but it fundamentally results in having to expect (even after having made careful calculations) translating FM characteristics (based on appropriate, but arguable, estimates and concomitant assumptions) to the PFM that the PFM is enough different from the FM to require a re-calibration. This subsequently feeds into whether MODIS Level 1 radiometry requirements in the thermal infrared can or cannot be met. Anderson is preparing a fixed cost estimate analysis of the work. Murphy indicated there would likely be a significant cost impact from the proposed but the recalibration can be done within a satisfactory time schedule and with tolerable risk. The impact of the cost of the recalibration; i.e., the availability of the funds in a very constrained EOS environment, will be a major consideration in deciding whether recalibration is or is not possible.

## 2.2 SDST

Fleig reported SDST is making good progress on the First Week in Life Tests for MODIS data. Testing will continue for several more weeks. SDST plans to incorporate additional test data received directly from the GDAAC. Esaias and King would like SDST to finish the Week in the Life Test soon so as to accommodate their software development which requires the installation of Unix version 7.2, required to test many of their codes that use Fortran 90 subroutines that simply will not run under version 7.1.

Fleig reported there is still ongoing work concerning the Memorandum of Understanding between ESDIS and SDST on PI Processing. In addition, Fleig said the PI Processing Proposal from SDST is nearly completed. Murphy said work should be finalized for the MOU and proposal by October 30. Fleig noted there will be eventually an appendix in the EOS AM Interface Control Document providing the actual details for MODIS.

Vermote said MODLAND is almost done reviewing the current MODIS Adaptive Processing System (MODAPS) Requirements Document. Esaias would like a copy of the revised document as soon as possible. Esaias recommended that the MODIS Discipline Group Leaders have a MODAPS related approval authority.

Murphy said Justice should set up a meeting about three weeks from now to review the PI Processing Plans.

Hall reported Scharfen of NSIDC is requesting that MODIS permit them to process MODIS data at NSIDC in a polar grid projection using EASE-Grid. Murphy and Fleig indicated it is a cost issue that Masuoka should estimate to provide to Salomonson for consideration. Murphy said any data transfer outside of the fiber optics data transfer to ESDIS in B32 would have an associated cost.

## 2.3 GDAAC Notes

Kempler (Attachment 1) summarized GDAAC notes for the last week. The Operations Readiness Exercises (OREs) are under internal review. The Drop 4PX software patch for Landsat-7 is postponed until Nov. 9. Kempler reported the Science and Operations Agreements are changing in scope to reflect PI processing and ECS-SIPS interface. ESDIS is requesting SDST to provide a higher level document to reflect changes associated with the PI processing. Murphy and Esaias said a PI processing master schedule should be prepared.

### 2.4 EOS Science Teams

King reported there were excellent science discussions at the recent IWG at the University of New Hampshire. He said he will be working with NASA HQ on Instrument Science Team Member and IDS contract follow-on plans. He thinks there needs to be an established time schedule for release of NRAs.

King has received his FY budget allocation and is making EOS allocations. He did receive some budge cuts he will have to incorporate. King said he is working with Reber (EOSDIS Project Scientist) to update charts and statistics on data processing and storage requirements by instrument. He said, for example, there are currently poor correlations between the number of data products and associated processing requirements, and hence costs.

King said 24 of the 36 MODIS ATBDs and Validation Plans & Charts need to be updated on the web. There are "outside" users making EOS data related plans and are relying on the ATBDs for their latest source of information. Now that all code has been delivered, the last ATBD panel for AM-1 has been conducted, and we have a one-year launch delay, it is essential that these documents be accurate documentation of the algorithms being used to process MODIS data.

### 2.5 Discipline Reports

King said the Atmosphere Team and related Validation Investigators will meet November 4-6. prior to the Science Team Meeting, to discuss science accomplishments, validation planning and data process status.

Esaias said the Oceans Group needs to know the EOS-am launch data as soon as possible to prepare validation activities.

Vermote reported MODLAND is working closely with SDST on the First Week of Life Testing. He said MODLAND held both a land cover and change meeting and a LAI/fpar meeting recently that were productive.

### 2.6 MAST

Murphy said there are 7-8 MODIS Team Member FY99 Work Plans and Budgets that are late. Conboy said MODIS received limited FY99 funding to get contracts through October. This funding is in the process of being distributed.

## 2.7 NOAA

Dan Tarpley (NOAA, Office of Research) said that NOAA plans to receive and process MODIS in near real time if possible, and distribute a selected subset of products to NOAA users. A system has been put in place at GSFC to process a part of the MODIS data. NOAA plans to seek resources from the IPO to use the MODIS and a MODIS processing system as a prototype and testbed for an operational advanced NPOESS imager.

## 3.0 Action Items

### 3.1 New Action Items

1. Justice: Set up a meeting about three weeks from now to review the PI Processing Plans.

### 3.2 Ongoing Action Items

1. Gentler: Deliver a schedule for an earlier date on Level 1 code. In addition work on, if possible, a more modularized version of the Level 1B code to minimize any problems from forthcoming software changes.

Status: This item remains open.

2. Murphy: Investigate the status of direct broadcast and present an update to the Technical Team.

Status: This item remains open.

3. Murphy: Coordinate a MODIS approach for radiance-to-brightness temperature conversions.

Status: This action remains open.

4. Guenther: Assign an MCST member to talk with Vermote about the scaling of DN* in the current L1B file format.

Status: This action item is closed. MCST will implement the changes in scaling that MODLAND has requested, and this should not impact Level 2 code.

5. Masuoka: Submit an EOS-PM Data Product Update to ESDIS.

Status: This action item remains open.

6. Masuoka: Distribute an e-mail message summarizing the status of production rules at ECS.

Status: This material was presented at the last Science Team meeting (June 24 - 26). Masuoka will update this information and pass it along to the discipline group leaders.

7. Murphy: Speak to MCST and the discipline group leaders about what to include in a Version 2.1.1 Level 1B delivery.

Status:  This item remains open.